AP Macroeconomics
Test: Keynesian Economics and Fiscal Policy
Instructor's Version

Answers: Free-Response Questions

1. Consider an economy in which autonomous consumption is 800, the marginal propensity to consume is 0.8, investment is 400, government spending is 500, taxation is 400, and net exports are 100.

   A. What is the equilibrium GDP in this economy? Show your work. (3 points)

   Answer: 7400
   Work: $Y = C + I + G + NX$
   $Y = 800 + 0.8*(Y - 400) + 400 + 500 + 100$
   $Y = 1480 + 0.8Y$
   $0.2Y = 1480$
   $Y = 7400$

   3 points for correct answer and work shown. Award only 2 points for using the correct equation with a small error in the calculation.

   B. What is the savings at this level of GDP? Show your work. (3 points)

   Answer: 700
   Work: $Y = C + S + T$
   $C = 800 + 0.8*(7400 - 400) = 800 + 5600 = 6400$
   $7400 = 6400 + S + 300$
   $S = 7400 - 6400 - 300 = 700$

   3 points for the correct answer and work shown. Award only 2 points for using the correct equation with a small error in the calculation.

   C. What are the spending and tax multipliers? Show your work. (4 points)

   Answer:
   Spending Multiplier = 1/(1 - MPC) = 1/(1 - 0.8) = 1/0.2 = 5
   Tax Multiplier = MPC/(1 - MPC) = 0.8/(1 - 0.8) = 0.8/0.2 = 4
   Alternative Tax Multiplier Method = Spending Multiplier - 1 = 5 - 1 = 4

   2 points for each correct answer. Award only 1 point for each if the correct equation is used but there is an error in the calculation.

   D. If government spending increases by 200, what is the new equilibrium GDP, and what is the increase over the original equilibrium GDP? Show your work. (4 points)

   Answer:
   Increase = Spending multiplier * increase in spending = 5 * 200 = 1000
   New GDP = Original + increase = 7400 + 1000 = 8400

   2 points for each correct answer. Award only 1 point for each if the correct equation is used but there is an error in the calculation.

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E. If the government increases both spending and taxation by 200, what is the new equilibrium GDP, and what is the increase over the original equilibrium GDP? Show your work. (4 points)

Answer:
Increase = balanced budget multiplier * increase of spending and taxation = 1 * 200 = 200
New GDP = Original + increase = 7400 + 200 = 7600

Alternative method:
Increase = spending increase - tax increase
Spending increase = 1000
Tax increase = tax multiplier * increase in taxation = 4 * 200 = 800
Increase = 1000 - 800 = 200

2 points for each correct answer. Award only 1 point for each if the correct equation is used, but there is an error in the calculation.

2. Investment

A. Use a graph and a written explanation to demonstrate how the level of investment is determined. (3 points)

Answer:
Graph: An investment demand curve — with the quantity of borrowing on the *x*-axis and the interest rate on the *y*-axis.

Explanation: Interest rates determine the level of investment. Because the investment demand curve is downward sloping, investment decreases as interest rates increase, and investment increases as interest rates decrease.

1 point for the graph; 1 point for each sentence in the explanation.

B. Explain what happens when the government enters the loanable funds market. (3 points)

Answer: When the government enters the loanable funds market, the demand for funds increases, shifting the demand curve to the right. The new equilibrium interest rate is higher. With a higher equilibrium interest rate, there is less private investment.

1 point for each sentence.

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C. When is the crowding-out effect most severe? Explain. (3 points)

Answer: The crowding-out effect is most severe when the investment demand curve is relatively flat. This occurs when investors are very sensitive to changes in interest rates. When the curve is flat, a small change in the interest rate will result in a larger change in investment, so government borrowing will crowd out investment more severely.

1 point for each sentence.

3. Describe the balanced-budget multiplier, and explain what happens when both taxation and spending are increased by 100. (3 points)

Answer: The balanced-budget multiplier applies when both taxes and spending are increased or decreased by the same amount. The balanced budget multiplier is always equal to 1. This means that an increase in both spending and taxation of 100 will increase GDP by 100.

1 point for each sentence.

4. The classical model assumes wages and prices are free to adjust to conditions. Keynes argued that prices and wages are sticky. List three reasons why wages and prices are sticky. (3 points)

Answer:
1. It is costly to change prices frequently.
2. Workers rarely accept pay decreases.
3. Long-term contracts such as leases, rental agreements, and employment contracts often include fixed-price terms.

1 point for each item.

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5. Use a graph and words to explain why an increase in spending when an economy is on the Keynesian segment of the *AS* curve causes a large increase in RGDP but only a small increase in the price level. (4 points)

Answer:
Graph: An *AD/AS* curve showing two *AD* curves, one intersecting far to the left, the other shifted to the right, both intersecting the flat portion of the *AS* curve. The Keynesian segment should be labeled.

Explanation: The Keynesian segment of the *AS* curve is relatively flat. When the curve is flat, an increase in spending produces a large amount of horizontal movement (the increase in RGDP), but little vertical movement (the increase in the price level).

1 point for the curves on the graph; 1 point for the Keynesian segment label; 1 point for each sentence in the explanation.

6. Fiscal Policy

A. Describe an expansionary fiscal policy and explain why this kind of policy is detrimental when an economy is at the full-employment level. (4 points)

Answer: An expansionary fiscal policy increases government spending and/or decreases taxes, which shifts the *AD* curve to the right. This generally increases RGDP and the price level. This creates inflation. This happens because, when the economy is at the full-employment level, it is on a steep portion of the *AS* curve, where there is very little increase in RGDP and a large increase in the price level.

1 point for each sentence.

B. Under what circumstances might the government want to use a contractionary fiscal policy to "cool off" the economy? Explain. (4 points)

Answer: When there is demand-pull inflation, the government might want to use a contractionary fiscal policy. By cutting government spending and/or increasing taxation, the government can reduce aggregate demand. A reduction in aggregate demand shifts the *AD* curve to the left, decreasing RGDP. It also reduces the price level, thus controlling inflation.

1 point for each sentence.

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